Human Connection in Nature's Voice: Social Minds in a Selfish Western Worldview

An Honors Thesis

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Abstract:

This work examines and provides evidence for social connection's integral role in human nature. I first introduce a distinction concerning separation and connection between self and other as it appears in Dr. Carol Gilligan's *In a Different Voice: Psychological Theory and Women's Development*. I then explore this distinction in the context of human nature. I use evidence from evolutionary history, cognitive development, and health to demonstrate the fundamental role of connecting with others in being human. I then investigate this social nature as it relates to the Western worldview, concluding that Western thought has historically maintained an emphasis on separateness, and so has wrongly distanced us from our nature.

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Chapter 1: Separation and Connection in Being Human

I. Introduction

Together we comprise the most socially intelligent and self-aware beings that life has been able to generate. In the biological sciences, findings reveal a multitude of human neurological, sensory, and morphological traits that function primarily in elevating our social cognition. Researchers in the fields of psychology and anthropology describe an expansive and diverse repertoire of human social behaviors, spanning thousands of cultures and civilizations. Discoveries from historical and philosophical disciplines tell of a human history rich with the technological and intellectual fruits of organized community. The globalized world of today, with its World Wide Web and a global literacy rate of over 80% (Huebler and Lu, 2013), is itself a wonderful testament to a human affinity for social connection. Generation after generation, we collectively benefit from the continuation and evolution of our transmittable ideas, technologies, and cultures. As a species of unmatched intelligence, with over 7 billion of us (and quickly rising) (United Nations, 2015) nestled into the confines of planet earth, it is our social aptitude that has proven to be one of our greatest and most defining assets.

Being human is to be in a condition of shared and social relationship between self and other. As individuals we maneuver a deeply social world. We continuously pay mind to the people that surround us, ensuring that what we say and do, for others, is in line with our intentions. We often believe we are acting on a mostly personal accord, but with a refined look, we are ever-tethered to the products of our social nature, ones both emerging from and being utilized by the individuals operating within them. Certainly, we do act

independently, but this personal agency is heavily molded by, even contingent on, the networks of social connection with others by which we function and gather meaning.

Psychologist Dr. Carol Gilligan's *In a Different Voice: Psychological Theory and Women's Development*, recognizes this vital interplay between individual agency and social connection. Published in 1983, *In a Different Voice* challenges assumptions (at the time long-held) in developmental and moral psychology.

Gilligan's work considers how distinct approaches to moral conflicts relate to differing views of self and other. Setting the stage for her later arguments, she identifies an inattention to girls in moral psychology, particularly in Lawrence Kohlberg's theorized stages of moral development. Her ideas begin on the grounds that traditionally feminine moral thought has been disregarded, misunderstood, and held as inferior in comparison to a well studied, normalized, and predominately male conception of moral development in the psychological sciences. Gilligan's investigation into the differences among boys and girls in constructing morality produces an integrative account of our species' moral intellect. Her work illuminates distinct conceptions of self and other, and offers a guiding insight into fundamental aspects of human nature.

In a Different Voice presents two overarching systems of moral understanding emphasizing either separateness or connectedness. To stress separateness in assessing moral dilemma yields a particular structuring of moral conflicts by way of principled, logical deduction, whereby separable individuals value and act independently and are regarded as moral when their actions avoid impeding upon another's agency. From Gilligan's own research, this moral layout composed of separate individuals is shown to appear in boys much more than girls. She then demonstrates that this setting of moral

decision-making has taken the role of being what is normal, mature, or desirable, a preference advanced by the acclaimed works of Jean Piaget, Kohlberg, and others.

In contrast, an emphasis on connectedness in moral decision-making is found primarily in young girls, an emphasis that maintains a strong focus on the contextually relative and evolving relationships of human life, a perspective viewing individuals as, Gilligan writes, "members of a network of relationships on whose continuation they all depend" (30). While the former basis is at the center of moral psychological theory, this latter, feminine basis is often regarded as undeveloped, as a precondition to moral maturation rather than a discerning elevation of moral thought in its own right. Concluding her work, Gilligan places both ways of tackling moral dilemma at the center of the human condition. Nevertheless, her work asserts that a relationship-centered means of confronting moral issues ought to be both more respected and studied.

In a Different Voice, then, acknowledges humanity's social connectedness, of relationships between self and others understandable in part by the agency of its self-aware participants, but comprehendible in full only if the inner workings and interdependence of social relationship (Gilligan's *Different Voice*) is considered as well.

A means to more completely address moral dilemma emerges, one fully aware of the importance of both the autonomous individual as well as a social connection with others in human life. From here, a construction of morality appears that better considers, writes Gilligan, a "continuing importance of attachment in the human life cycle," whereby, in large part, "morality and the preservation of life are contingent on sustaining connection"(23, 59). Serving our benefit, a moral framework comes to view that better understands, "the paradoxical truths of human experience—that we know ourselves as

separate only insofar as we live in connection with others, and that we experience relationship only insofar as we differentiate other from self" (63). Under this light, deciding what is right and wrong brings both the agency and connectivity of the individual to center stage, giving a fuller picture of human thought.

Rooted in Gilligan's work, this view of a humanity where relationships and connectedness hold vital importance will serve as this work's stepping off point. It is a perspective central to my arguments to follow, and so is one the reader should continue to bear in mind.

With this background at hand, I aim to present evidence and argument that connection, as it appears in Gilligan's *Different Voice,* is a foundational aspect of our nature. I hope to show why humanity should be considered as, to its core, composed of indissoluble and social individuals—that, from our DNA to our intelligence, our social nature fixes us in a state of connection with others. I would then like to demonstrate that an overshadowing of this social dependency, despite human nature, has been with the Western worldview since its beginnings—that, for worse, Gilligan's *Different Voice* has gone and continues to go underemphasized.

Gilligan writes, "... [She] comes to know herself as she is known, through her relationships with others," (12); along these lines, I hope that this work will be able to offer some light, however small, on a path to better understanding who and what we are.

Chapter 2: Our Nature and the Fundamentality of Social Connection

I. Humanity Evolves

Our form and function serves a largely social purpose, one that intrinsically drives relationships between self and other. A better understanding of these various traits brings into perspective a humanity teeming with social connection. In order to understand our sociality, we will start with the base notes of what we are. Specifically, we should first acknowledge that humanity is life, and should then recognize that all known life is an evolving product of the process of natural selection.

To be clear, I believe that these initial recognitions are foundations upon which inquiries into human nature should be built, but I do not consider them to be adequate alone. This is in large part due to the immense complexity of life. To elucidate, let us briefly and biologically describe the human body. In the human being there are about 37 trillion human cells, and along with those over 100 trillion non-human bacteria and other microorganisms (Bianconi et al., 2012; Turnbaugh et al., 2007). Then, consider that there are an estimated *quadrillion* neural synapses (i.e. points at which nerve cells unite) linking the nervous system (Pakkenberg et al., 2003), through which emerge complex qualities like behaviors and emotions. Leaving the body behind, there are the hundreds of millions of extant multicellular species, their biophysical properties, their chemical reactions, their behaviors, body systems, earth's ecosystems, conscious life, etc. In other words, life brings into existence the most complex processes and arrangements of matter and energy that we know of. At present, even if biology alone could somehow provide comprehensive answers

to the human condition, we would drown in information before knowing how to respond to it. In the face of life's mysteries, scientific study alone can only penetrate so much.

Nonetheless, with the goal of better comprehending our social nature, the study of life is rightly where we will base our inquiry. Biology, after all, reveals astoundingly simple guidelines behind this complexity, ones that serve as useful benchmarks for understanding what we are as living beings.

Mentioning a few of the characteristics thought to be universal to all life will begin to narrow our focus. For one, all known life is carbon based and, in addition to carbon, will at least contain the elements hydrogen, oxygen, nitrogen, and phosphorous (Sterner and Elser, 2002). Furthermore, all known life is cellular, metabolizes energy, grows, and responds to stimuli (Koshland, 2002). While other, less agreed upon universals have been proposed, there is much debate to be had among scientists in defining the characteristics of all life.

However, we can turn to established knowledge to find the commonality across all life most important to our goal. That is, we now know that all living things on earth contain genetic, heritable, and mutable instruction in the form of either ribo- or deoxyribonucleic acid (RNA or DNA, respectively). This genetic information then codes for, regulates, and instructs the specific formation of the proteins that compose all of earth's life. RNA and/or DNA, for any given organism, acts as a set of instructions that ultimately result in that particular organism's structures and functions.

Next, consider that all organisms reproduce, thus passing on their genes to offspring either asexually or with conspecifics. In any particular group of reproducing organisms, one will find that each individual organism is varied from any other individual organism.

This variation is primarily at the level of genetic instruction (Dobzhansky, 1951), of which no two individuals are the same.

Some, but not all, of these variations will affect the observable traits of the organism. Even fewer of those variations will specifically affect how successful the organism is at reproducing. Given this variation in reproductive success, the organisms that happen to have the set of variations that yield the most reproductive success (in the context of their environments) will, hence, produce relatively more offspring than others (Darwin, 1871). Those better at reproducing simply reproduce more, whereby relatively more offspring will possess genomes largely inherited from them. Therefore, the genetic composition of subsequent generations will be more influenced by those with the most reproductive success—nature will simply pass on the gene-based set of variations best suited to being passed on.

Over time, over many generations, from this simple process of selection emerge new species[1], new adaptions, and new abilities among life's organisms[2]. To employ a well known example, just as humans have throughout history artificially selected for certain characteristics in dog breeds, agricultural harvests, livestock, etc., so the environment naturally selects for certain traits among organisms. This differential reproductive success due to genetic variation inherited by subsequent generations of offspring, in the midst of dynamic environmental conditions naturally posing a set of pressures that are best met by certain traits, is the process of natural selection. It stands today, above immense evidence, as the foundational theory of the study of life.

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[1] See Gavrilet, 2004 for an example
[2] See Futuyma, 2005 for an overview

Biological evolution, or a change in a living thing's traits over time, is the fundamental, unifying principle of all life. Darwinian evolution—biological evolution by the process of natural selection—is at the center of this change. In the past, the U.S. National Aeronautics and Space Administration (NASA) was tasked with forming a single definition for all life (a goal many biologist and scholars would consider an unfruitful if not an impossible undertaking [3]). Eventually, the administration came to the rather broad definition that life was simply, "any self-sustained chemical system capable of undergoing Darwinian Evolution" (Joyce , 1994). Upon intensive critical analysis, then, it is Darwinian evolution that makes the cut as a defining principle of life. To use the title of Dobzhansky's (1973) now-famous essay: "Nothing in biology makes sense except in the light of evolution."

In spite of life's seemingly impenetrable complexity, it would now appear that we have at least one sturdy benchmark—that is, whatever is life evolves by natural selection. We are sure that that small portion of the universe we call life is acted upon by this process; be it by some creator or not, all of life is in some part guided by natural selection. But why is this so relevant to our analysis? Why should our genes (and so our traits) being naturally selected for mean so much to appreciating humanity's social nature?

By understanding the primacy of evolution by natural selection, we can begin to understand our traits with a more refined look at the influential processes by which they came to be our traits. In other words, we can better understand why we are today the way we are. Humans are stuck being humans. Try as we might, the lens of our nature is what we will forever look through and where we will be firmly rooted. But our interpretations of

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[3] See Cleland and Chyba, 2002 for an example

this nature are enhanced and put into greater perspective when we bear in mind that, as life, we were something selected for. We contain a set of favorable traits selected, over time, from a natural interplay between life and environment. To understand human nature, we should appreciate that selective pressures molded what we are as both a species and as acting and thinking individuals.

Natural selection does not give us a complete grasp of the human condition by any means, but it certainly provides it with clearer vision. With natural selection in mind, we can identify defining aspects of what we are and then better comprehend why we hold those aspects. We can ask ourselves what pressures along our past led to such aspects, or how the process of natural selection, to which all life is subject, played its part in our particular form. This grants us an evolutionary history that can shed light not only on what we are but what we have (our strengths, weaknesses, biases, etc.). With biology's foundational theory at hand, a picture of our nature can be more clearly painted.

So how and when did human nature (as we know it today) come to be? We can chip away at this question by first looking at when our species arose. Over time, humans adapted to an environment posing selective pressures, and this has conveyed us to what we biologically are today.

As it turns out, the evolution of humanity occurred at a markedly fast pace. The emergence of anatomically modern humans is estimated to have occurred roughly 200,000 years ago (Mellars, 2007). During humanity's initial centuries, life was not so complex, though hazardous. Humanity's small, global population was mainly in Africa, composed of small groups of traveling hunter-gatherers. These groups lived in a way analogous to many

extant mammals today. They bred, searched for food, and avoided being consumed by predators. These early ancestors were certainly not dominating the planet.

But our humble beginnings were far from permanent. Evolutionarily abrupt, a cognizance unparalleled by all previous life would emerge. Approximately 40,000-60,000 years ago marks the beginning of what is today called "The Human Revolution" (Mellars, 1989). During this period, archeological evidence begins to abound with cultural and technological artifacts, revealing what appears to be a sudden and sweeping advancement of human life. The human population steeply rises during this time, and the first evidence appears of trade networks, of goods being exchanged long-distance across distanced communities. Refined tools, cosmetic and artistic artifacts, as well as evidence of sophisticated language, cultures, and ceremonial practices are seen for the first time in human history (Klein, 1995 and Tomasello, 2009). At this time, humanity begins to radiate with a consciousness similar to its present-day form.

By 12,000 years ago, humanity developed agriculture, which catapulted its global population and further ushered in cultural and technological growth. The development of agriculture marks another critical, progressive step in human history, beginning what is today called the "Neolithic Revolution." With agriculture providing a continuous, stationary source of nutrition, the construction and maintenance of permanent human settlements was made possible, and with them the eventual formation of industries, economies, cities, and material wealth at a scale unthinkable to our ancestral hunter-gatherers (Weisdorf, 2005). At the advent of agriculture, our global population was roughly 8 million. Consider today's population, and clearly we have grown in number and advanced our knowledge of the world exponentially. It seems we are not only profoundly successful in our ability to

understand the world, but are also incredibly quick in doing so. Our evolution, our rapid progress, is arguably the most remarkable feat of all known life.

II. Sociality in the Emergence of Human Intelligence

Let us now look at why humans are capable of such progress, and how probing into the selective pressures marking our evolutionary history can shed light on this capability.

It should not be a surprise to the reader that we can largely attribute our success to our intelligence. Anatomically, our brains are remarkably large for our body size. This is the case with all primates (Jerison, 1973), the order of animals in which humans are classified along with monkeys and apes. Our brains are also highly complex, able to function cognitively at a level far above other species. Bearing in mind the predators we have shared this world with throughout our history (saber-toothed tigers, mammoths, etc.), our species' success has definitively been a story of brains rather than brawns.

Concerning our intelligence, one particular region of the brain most sets us apart from other species: the neocortex. The neocortex is a layer of gray matter that lies at the frontal surface of the mammalian brain. The *neo-* (latin for "new") in the structure's name is derived from its classification as the most recent evolutionary addition to the mammalian brain (Noback, 2005). While a developed portion of the brain in all mammals, the neocortex is especially developed in humans.

The brain is an integrated organ, with certain areas being responsible for certain processes, but only together producing conscious and unconscious senses and actions. Nevertheless, it is the neocortex that is the primary site of our higher cognitive processing. The neocortex plays a critical role in the majority of our uniquely human mental functions,

in capacities such as advanced conscious thought, sophisticated emotional processing, semantic memory, our sensory perception of the world, spatial reasoning, and language (Sherwood, 2015). In less intelligent mammals (e.g. rodents, canines, felines, etc.) this brain region is comparatively simple; its surface is smooth, and provides little surface area. In contrast, the neocortex in humans is covered in deep ridges and grooves that fold the tissue over and allow for more neocortex volume within the space of the skull. This allows for the human neocortex to occupy a higher ratio of space than in any other primate brain.

Our large, highly developed neocortex, neuroscientist have shown, ultimately makes possible advanced human cognition (Preuss, 2009). Occupying over 70% of your brain, your neocortex is the primary site what makes you you. The famous cosmologist Dr. Carl Sagan writes of the neocortex as the site where, "matter is transformed into consciousness... It is the distinction of our species, the seat of our humanity" (Sagan, 1980, pg. 229.).

The selective pressures to which we chiefly owe the evolution of this seat are social. The "Social Brain Hypothesis," first proposed by anthropologist Richard Dunbar, offers insight into these pressures. The hypothesis' primary assertion is that the evolution of our advanced intelligence was put into motion, and ultimately formed by, environmental pressures that were met in the maneuvering and maintenance of social relationships within social groups (Suddendorf, 2004). Our intelligence is believed to have developed, then, not to adapt to physical challenges (e.g. the avoidance of predation, the search for food, etc.), but to social challenges.

Somewhere along our evolution, social utility arose as a means to face the pressures of our environment. Social adaptations are seen in many species (e.g. whales and dolphins,

apes, ants, elephants, etc.), just most sophisticatedly in the primates, mostly in humans. With an evolutionary drive towards social utility, complex social networks resulted. And while socialization served as an adaptation to environmental pressures, it also fostered new, *social* pressures, pressures met by the organism's ability to effectively maneuver social groups and so increase its reproductive success and a pass on its gene-based traits. Adaptions heightening skills such as cooperation, the maintenance of numerous social bonds (Dunbar and Shultz, 2007), the ability to gauge the honesty and/or mood of social group members, and the ability to more effectively communicate with group members arose as a means to procure the benefits of socialization. As Dunbar writes in reference to living in large groups, "an animal [in a large social group] has to engage in a sophisticated balancing act..." forming relationships, partnerships and "coalitions" that are, "...possible because of the social cognitive skills that allow primates to weld these miniature networks into effective social units" (Dunbar, 2003, p.171). From environments selecting for social utility and, in turn, from social environments posing selective pressures, emerged a human intelligence capable of meeting the demands of living in a social world.

For Dunbar, the evolution of the human mind was the evolution of a social mind. Contemporary evidence supports his position. Our social cognitive talents have been shown to arise evolutionarily as adaptations at the level of the neocortex, the primary site of the higher cognitive functions that have brought into being the human intellect. In primates, group size, the extent to which social skills are employed to mating strategies, the frequency of tactical deception, and the frequency of social play—all of which are primarily social behaviors—have been positively correlated to neocortex volume (Byrne and Corp., 2004; Dunbar, 2003). Furthermore, a significant relationship exists between social group

size and the relative neocortex size of individuals, so much so that neocortex volume is an effective predictor of social group size (Dunbar, 2009). Species with larger neocortex volumes have proportionally larger social networks. Evidently, the site of the brain that acts as the primary source of humanity's higher thinking heavily correlates to social ability.

Humans have massive social group sizes relative to other social animals. Each human individual, it is estimated, has the capacity to maintain upwards of 150 social relationships, whereby each related individual is both known and relatable to the other 149 individuals (Purves, 2008). Surely, the ability to maintain a network of this size requires extraordinary intelligence. The bigger the social group, the higher the social adeptness needed to maintain more relationships. Upholding groups of this size acted as an adaptive tool for humans, but also posed new and unique social challenges that played a role in nature's vying for reproductive success. Overall, the site where "matter is transformed into consciousness..." as Segan writes, appears to be a site owing its composition to the social pressures it adapted to meet.

Alongside Dunbar's Social Brain Hypothesis, a myriad of contributing theories on the evolution of human intelligence concede the fundamentality of social pressures. For instance, the social exchange theory has a basis much like Dunbar's in that it centers the evolution of intelligence on the demand to evolve to specialized social problem solving skills. Proponents of the social exchange theory argue that the social utility of exchanging goods primarily led to the evolution of our higher intelligence. Researchers cite entire neurocognitive systems specialized for reasoning through social exchanges, particularly in the identification of cheaters. Scientists and game theorists have recognized that those parties capable of and engaged in social exchange will mutually benefit from one another

(and so choose to do so) *unless* cheaters are present (Cosmides et al., 2010). Human neurocognitive systems that are refined especially in their capacity to recognize cheaters (Cosmides and Tooby, 2005) and so protect the benefits of social exchange, then, point to the criticalness of social exchange and the importance of fostering this exchange's mutual benefits along our evolution.

Another contributing theory on the evolution of human intelligence is the ecological dominance–social competition model, which proposes our intelligence stems less from social cooperation and more from social competition. This model proposes that the primary selective pressures for increasing human intelligence lie in a competition for intragroup dominance. This model posits an evolutionary arms race, whereby social adaptation is required to dominate in an increasingly complex social environment. In a similar vein as the Social Brain Hypothesis, little by little social adaptations alter the composition of social environments, posing additional pressures that ultimately cause more social adaptations and social cognitive abilities (Flinn et al., 2005). In this way, socialization naturally grows in complexity, and with it an intelligence to maneuver it. Accordingly, one's capacity to show one's value to others, one's ability to maintain dominance within the group, and the ability to meet one's individual and offspring's demands by tapping into a social environment, with the ability to maintain the relationships therein, have heavily contributed to the cognitive capacities we have today (Prinz et al., 2007). From human social groups, an anthropogenic environment emerges, creating competition that is best met through the ability to obtain and respond appropriately to social and cultural information (Flinn, 1997). Those best at dominating the

social spheres they participate in benefit most from the social group. The human brain, once again, is argued to be as it is largely via social pressures and their related adaptations.

Perhaps the most cooperative theory as to the evolution of human intelligence is rooted in the idea of group selection. Under the view of group selection, selective pressures along our evolutionary history acted on both the individual and the group. Inter- as well as intra-group challenges produce social pressures. Edward O. Wilson, a well-known and distinguished naturalist and biologist, appeals to group selection in his conception of the human condition. He writes, "...to form groups, drawing visceral comfort and pride from familiar fellowship, and to defend the group enthusiastically against rival groups—these are among the absolute universals of human nature and hence of culture" (Wilson, 2012, p. 51). This tendency to form and maintain groups, argues Wilson and other group-selectionists, has played a primary role in humanity's survival and contemporary form. Those best suited to maintaining an awareness of the groups by which they benefit from and live within, then, ultimately pass on their genes, and so those traits.

We arrive at the conclusion that the human brain, specifically the neocortex, has a composition that in large part alludes to an evolutionary history that is social. A series of mental adaptations characterized by the enhancement of social utility via enhanced intelligence mark the evolutionary stepping-stones of our higher thinking. We can use the models and hypotheses described above, not to close the case on the origins of human intelligence, but to confidently note the importance of social pressures along our evolution and in the emergence of our intellect.

III. Social Learning in Cognitive Development

An especially high intelligence is responsible for our success as a species and has made possible what makes us human. Our brains make our language, culture, and our current state of intellectual and technological sophistication achievable. So far we have only recognized our brain as being merely what makes such things a possibility, as something that evolutionarily arose and allowed for higher thinking. But how does this higher thinking occur? Up until now, we have ignored that to enact our intelligence, humans have to learn.

Our learning abilities are fundamental to our intellect. In humans, especially long childhoods provide a wide window of heightened learning and cognitive growth. This prolonged period of childhood is a unique feature of our development, and further sets us apart from most other animals (Kaplan, 2000). During our childhoods, growth is focused on the brain, with metabolic energy and glucose (i.e. a primary source of metabolic energy) expenditure by the brain being markedly higher in childhood relative to adulthood (Kuzawa et al., 2014). As we grow into adults, our brains use the brunt of our sequestered energy for the purpose of cognitive development.

By exploring how we learn, humanity's social nature again proves to be fundamental. The means by which our intelligence-prone brains come to effectively acquire, store, integrate, and actualize knowledge as we grow depends, as did the evolution of our intelligence, on social connection.

Human learning is inherently social. We learn, as infants onward, from other people. At birth we are essentially helpless, dependent on our caregivers for food, shelter, and safety. To relinquish this dependence, we must learn how to maneuver the world. Rather

than to learn each and every facet of surviving in the world from our own experiences (being rewarded and punished) humans distinctively look to others to learn quickly and efficiently (Frith and Frith, 2007). In referencing others, we expedite the learning process.

The world for a newborn is a complex and demanding place. Other people act along human development to teach the infant to maneuver these complexities. The infant will in turn learn by observation, following in and retaining the guidance of the people that surround her. By default, she follows lead. The now famous findings by Watson and Rayner (1920), in which Albert, a baby boy, was conditioned by researchers to fear a lab rat, demonstrates great malleability in the infant's developing sense of the world. The infants initial construction of reality is fragile and at the mercy of early experience. The people who care for and surround the infant serve to ensure that this construction is a fruitful one.

Humans are born ready to learn and are innately aware that the source of this learning will be others. To begin learning, infants readily utilize social interaction (Bandura, 1986). This socially sourced learning is seen in an infant's innate and astounding propensity for imitation.

The inborn capacity for imitative learning in human infants is remarkable. Within the first year of life, infants begin to infer the goals of mothers based on observing their actions, and retain and put to use these relationships between actions and goals themselves (Hauf and Ascersleben, 2008). Infants 14 to 18 months old have been shown to imitate action-goal patterns with objects after observing adults (without specifically being guided to do so) *four months* following their observations (Meltzoff, 1999), indicating that complex object-specific, action-goal relationships are being remembered from a exceptionally young age. While still unable to grasp the concept of object permanence, infants are engaging in

sophisticated imitative learning. As humans, we come into being with a precondition to imitate and notice the actions and consequences of others; our brains are innately prone to observe, relate to, and learn from the people around us.

Furthermore, alongside an innate capacity to imitate other people, infants have been found to enjoy and seek out imitative learning. Infants are aware of when they themselves are being imitated, a realization often accompanied by joy (Field, 1990). Infants, then, become comfortable sharing the world with their mothers, knowing how to both learn from and follow their mother's lead, as well as knowing when they are being followed themselves. These mother-infant mutualistic relationships allow the infant to initially learn about people, places, and objects. In this way, cognitive structures critical to maturation are initially acquired and understood as social and interactional (Zlatev et al., 2008).

The importance of this mother-infant shared state, in which both act according to the knowledge that they are observing each other, is exemplified in the "Still Face Experiment." In this experiment, a mother and her newborn are placed face to face. Initially, they interact with each other normally, with the mother smiling, touching, talking to, and responding to her baby's gestures. Following the cue of the researcher, the mother then assumes a still, neutral face, ignoring and refusing to interact with the infant. Upon notice of their mother's neutrality, infants tend to show marked distress. They react by squirming, withdrawal, increased heart rate, or crying (Weinberg and Tronick, 1996). This experiment furthers findings that social bonding between infant and caregiver is critical to cognitive and behavioral development (Karelina and DeVries, 2011). An adverse reaction to a seemingly non-interactional other ensures that infants are consistently provided social

feedback cues. In this way, continuously aware and acknowledging mothers/caregivers provide the infant with a near constant source of social learning.

Imitative learning continues throughout the infant's first year of life. At around 9-18 months of age, infants undergo a further cognitive change that is critical and unique to the human mind. Infants at this time begin to view other humans as intentional beings; the actions of their conspecifics become distinct from the actions of inanimate objects in that they begin to be seen as actions made by animated, thinking, intentional, and relatable adults (Carpenter et al., 1998; Meltzoff, 1999). During this time, infants begin to frequently point and attempt to show objects to others *only* for the purpose of sharing with others an attention paid to that object (Tomasello, 2009). A deep meaning begins being adorned to the actions of fellow humans specifically because these actions are intentioned by other humans. The infant now notices that she and others share a fundamental capacity to both guide their experiences and observations of the same world. Cognitively, she matures, setting her knowledge for new heights.

Many view this ability to recognize conspecifics as intentional agents as specific to the human mind. The developmental and comparative psychologist Michael Tomasello, in his influential book *The Cultural Origins of Human Cognition*, writes, "human beings are able to pool their cognitive resources in ways that other animals species are not" due to a "single very special form of social cognition, namely, the ability of individual organisms to understand conspecifics as beings like themselves who have intentional and mental lives like their own" (Tomasello, 2009). Like our advanced intelligence, this ability to recognize that one is sharing the world with intentional agents *like themselves* appears to be a unique capacity of human thinking (Tomasello et al., 2005).

This exceptional ability to understand others as mentally capable of intention is clearly a particularly adept, human connection between self and other. It is connection experienced by only human life. Recognizing that the self, like the other, and the other, like the self, are within a shared environment and that *both* have a capacity to decide how to maneuver this environment begins only in our species, and just as we begin to construct our realities.

The neurological systems underlying social observational and imitative learning can shed light on how humans, from infants onward, skillfully understand and respond to others. One such system worth noting here is the mirror neuron system (MNS). Researchers first discovered mirror neurons in the early 1990s. Using monkeys as test subjects, they found that certain neurons became active in the same way both when a monkey engaged in or observed another perform a certain goal-directed action (Di Pellegrino, 1992). A groundbreaking discovery, mirror neurons were subsequently explored in adults. So far, research has been promising in indicating that the MSN plays a substantial role in human thinking. Researchers have shown that key motor and action areas in the brain exhibit mirror-neuron behavior, offering insight into how infants are able to bridge the gap between a first-person self and third-person others so early in life (Barresi and Moore, 2008). As research into the MNS continues to expand, time will tell if the answers of how and why we have an inborn capacity to connect lie within this neurological system. The field of social cognitive neuroscience as a whole, in its drive to understand how social thinking/learning affects brain activity[4], will continue to expand our knowledge of the neurological mechanisms inherent to social connection.

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[4] See Liberman, 2007 and Decety and Sommerville, 2003 for an overview

Learning further accelerates through childhood. A few more critical advances in cognitive development are worth mentioning here. By 2-3 years of age, children are able to recognize themselves in mirrors, a self-recognition that allows children to explore and play in a world where they now have a concrete representation of self (Lewis, 2004). With this physical representation of self comes recognition of how others perceive this concrete self, opening up new possibilities for relation, communication, and learning. Soon after self-recognition occurs, children begin to understand and assess other's mental states. Within just four years of life, virtually all mentally healthy children are able to retain, assess, and relate to the (entirely unobservable) beliefs and mentalities of others (Permer and Wimmer, 1985). Interestingly, researchers have shown that these distinct, cognitively advanced perceptions of self and other's mental states that arise at this age exhibit overlap and possible mirroring in their neural signaling, with certain neural processes related to mental state representation of self and other being similar at the level of the brain (Decety and Sommerville, 2003). For the child, a world emerges where another's mental states become a perceptible and relatable object of thought.

We will end this exploration of our cognitive development at perhaps the greatest innovation of human intellect. Beginning at 12 months of age and continuing to develop into adulthood, children observe and gradually learn to utilize language. All healthy children have this unique capacity to learn language (Gleitman, 1993). A crowning achievement of human cognition, language is the symbolic system through which our species patterns and orders the world. Language grants us a reliable vocabulary for identifying and distinguishing experience. It offers a almost boundless lexis, whereby we can express, characterize, represent, and communicate our actions, our goals, and our

feelings, as well as the innumerable characteristics of the observable world we share with others (Hauser, 1996).

The ability of humans to utilize language is astonishing. First appearing in the archeological record about 50,000 years ago, we have an anatomy specialized for producing complex utterances and speech patterns. Rather than to facilitate increased ingestion, our pharynx, tongue, and larynx are specialized for speech, granting us the ability to employ a broad range of vocalizations that allow us to finely control the sounds we produce (Lieberman, 2007). Additionally, sophisticated nervous control of our abdominal and thoracic muscles ensure that our breathing, and so the air passing through our vocal tract, can be finely controlled (MacLarnon and Hewitt, 1999). Our anatomy grants us the functional capacity for language, a set of adaptions in our morphology that, in and of themselves, are unique to humans.

Engaging this anatomical capacity for speech, the human brain is hardwired for language. Neuroscientists and linguists, using functional magnetic resonance imaging (fMRI) and positron emission tomography (PET) have uncovered numerous brain areas active in processing and acquiring language[5]. Different brain regions operate together to yield the multiple aspects needed for understanding and utilizing language, such as hearing and comprehending other's speaking, semantic processing, grammar, and syntax comprehension. Our brains, considered alongside an anatomy for speech, reveal a multifaceted and sophisticated collection of traits that facilitate language development and use.

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[5] See Sakai, 2005, Hickok, 2000, and Pinker, 1994 for an overview

As we observe the world and others as infants, we come to naturally develop language skills in mimicking and watching our caregivers. We acquire language innately, without any guidance to do so. We learn to retain, process, and utter a lexicon along a developmental path that parallels many of the cognitive milestones discussed earlier. Like virtually all of our cognitive faculties, our language ability increases as our brains increase in size throughout childhood (Sakai, 2005). From roughly 9-15 months to 15-23 months of age, infants develop a vocabulary of about 50 words, primarily of words that represent objects. From here their vocabularies grow rapidly. By 18-24 months of age, multiple-word utterances begin, marking the beginning of sentence formation. By this point, children express their wants to adults. By 2 to 4 years of age, children begin developing grammatical sophistication, and from there build their knowledge of syntax (Stromsworld, 2000). Education from caregivers and teachers next allows children to form a more sophisticated vocal vocabulary and, for many, the skills needed to read and write. By 11-14 years of age, students are estimated to know the meaning of over 10,000 words, a number that increases to 17,000 or more by the time they become adults (Zechmeisterm, 1995). The ability to learn a vocabulary of this size makes possible a mode of communication far more extensive than that of all other species.

Being one of our most extraordinary cognitive abilities, language is also one of the most complex. Certainly, hundreds of pages could be written detailing how the faculty of language relates to communication and socialization. Linguists, psychologists, and neuroscientists have amassed an enormous body of knowledge on the different mechanisms and patterns seen in language cognition. Scholars such as Noam Chomsky, Steven Pinker, Alfred Korzybski, and Benjamin Lee Whorf have all striven to investigate

language, its meaning, and its impact on the way we view the world. Certainly, there is much to overview, and still much to learn, about the human capacity for language.

Yet, for the purpose of this work I am going to trust the reader to appreciate language's relationship, as both a facilitator and consequence of, social connection. Ask yourselves, "Of the thoughts, values, and ideas that occupy my time, which are dependent on language?" The answer to this question, I believe, is nearly all of them. What you know is dependent on a vocabulary. You rely on a system of symbolism to order and reference your thinking. Even when not speaking to others directly, you utilize an internal monologue or inner speech (Vygotsky et al., 1929). This could not be otherwise. As I said earlier, the lens of our nature is what we will forever look through. To form in-depth understanding, we by our nature utilize language. Language is the human means through which we organize and pattern the world in a way that is reliable and continuously referable to us. In this way, language is our defining utility, a necessity of advanced communication and human understanding.

And we should not forget that the utilization and development of language is not some feat of the self. Rather, it is the direct product of our sociality. The possibility for language, and the cognitive means to learn this language, depended upon a drive for social connection pervasive in our evolutionary history and our nature. Through language, we have the unbelievable ability to understand and share ourselves with others, to join our cognitive pursuits with the people we live with (Mercer, 2000). Language provides a pool of symbolism where our innumerable experiences, thoughts, and observations can be placed into and communicated. This system of communication, critical to the modern

human condition, both fosters from and cultivates a social connection that is at the core of our intellect and nature.

And so, by outlining the progression of human learning, we see that cognitive development is largely carried forth by social means, especially through language. Human learning is primed by a connection between self and other.

IV. Social Connection and Human Health

It is not solely our minds, however, that depend on social connection. Further evidence for social connection's fundamentality lies in its effects on our overall health. Both mentally and physically, socially isolated humans tend to be less healthy (House et al., 1988). For instance, social isolation in adults has been linked to impaired physiological functioning, sleeping less efficiently, and healing slower in comparison to non-socially isolated counterparts (Caioppo and Hawkey, 2003). Increased morbidity and mortality in both diseased and healthy individuals, impaired mental health, and increased risk of suicide have all been correlated to a lack of social relationships as well (Holt-Lunstad et al., 2010). Social isolation has also been shown to be a risk factor in heart disease, with enhanced isolation increasing anxiety and impairing proper endocrine functions, overall negatively impacting cardiovascular health (Knox and Uvnäs-Moberg, 1988; Zarbo et al., 2013). A wealth of additional evidence exists linking an absence of social relationships with negative health consequences. A meta-analysis of mortality by Holt-Lunstad et al. (2010) analyzed 148 individual studies and found a 50% overall increase in survivability as a function of social relationship. No wonder the benefits of social support from others are

now being emphasized and investigated by the medical community in the treatment of both mental and physical diseases and disorders[6].

History also provides us with grim examples of social isolation's impact on health. In the interests of better characterizing mental illness, a few psychologists in the 1960s and 1970s set out to describe the effects of complete social isolation for prolonged time periods. To do this, many worked with monkeys, confining them to single cells and rearing them away from their mothers, treatments that would be considered intolerably unethical by today's standards. Harlow et al. (1965) found that total social isolation for over 3 months in rhesus macaques lead to a debilitating, chronic fearfulness, as well as the inability to form normal social support systems following total isolation. Research on macaques by Sacckett et al. (1976) details the consequences of what these researchers dubbed "The Isolation Syndrome" which includes symptoms such as "body rocking, self-clutching, peculiar posters, stereotyped locomotion, self-directed aggression" (115) as well as uncoordinated movement, and a lack of exploratory behavior (i.e. a fearfulness). While one is thankful that these studies will not be replicated, they illustrate the alarming impact of only a handful of months of social isolation for individuals of a closely related social species.

The effects of human solitary confinement, particularly in prisons, further exemplify the harm caused by social deprivation. Inmates exposed to social isolation often exhibit a number of horrifying symptoms, such as severe anxiety, increased heart rate, panic, shortness of breath, visual and/or auditory hallucinations, amnesia, and overbearing compulsions and obsessions (Grassian, 1983). These findings strongly demonstrate the

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[6] See Bloom, 1990, Cllaghan and Morrissey 1993, and Unchino, 2009 for examples

importance of social wellbeing in human life. Without social connection, one is subject to psychological turmoil, leading many to view the practice of using isolation to punish criminals a human rights violation or a form of torture[7]. Concerning one's health, evidence shows that nothing good comes from a lack of social connection.

Understanding the importance of social relationships in human health, and the terrors that can result when those relationships are absent, further reveals the primacy of connection in being human. With a failure to connect with others so detrimental, humans are considerably dependent upon other people. Our overall wellbeing is contingent, throughout life, on the existence of others with whom relationship can be formed. Our bodies and brains literally fail us when a connection with others, that key and continuous ingredient to our nature, is removed.

V. Summary

Humanity is of that rare arrangement of energy and matter that we call life. Therefore, it is subject to natural selection. From life emerged human intelligence, an extraordinary, unequaled set of cognitive capacities that have made possible our knowledge and technological progress. Generation by generation humanity's higher intelligence evolved through adaptations at the level of the brain, specifically the neocortex. This was an evolution characterized by naturally selective, social pressures. In the winds of the social environments it evolved to maneuver, the neocortex was carried into its modern form.

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[7] see Kupers, 2008 for an example

In social connection, we have developed our intellect as a species, and we have also learned as people. From birth onward, we look towards others to learn and make sense of the world. Our cognitive development depends upon an observing and knowing of others. We begin our lives with this connection, one that our mental and physical health then continues to depend on throughout life.

Human beings are an immensely intelligent, successful, and knowledgeable species. Our standing as a remarkably intelligent life form has been, and continues to be, contingent upon our social nature, on a refined and unique capacity to connect with others that, as people, as a species, we naturally rely on.

Chapter 3: An Absence of Social Connection in the Western Worldview

I. Separation over Connection in Western Thought

As we have seen, our brains, our development, and our health are dependent on connecting and communicating with others. It seems to follow that, in forming a society or culture, humans would emphasize this connective nature, recognizing and understanding it while also putting it to use. One would think that a condition of connection of such importance to our knowledge and progress would surely find itself expressed and rooted in our values, virtues, and understanding of the world.

This is what makes the Western worldview so puzzling[8]. In spite of our innate social capacity and drive to connect, the Western worldview has historically maintained an emphasis of the separateness of human beings. In the West, we seem to cherish the products of self-guidance and individuality, while devaluing the products of social connectedness.

From the Greeks onward, a worldview focused on an awareness of separate and detached selfness has shaped our understandings. While this worldview has unquestionably been valuable, it manages to place all of its focus, as Gilligan's *In a Different Voice* and our nature demonstrate, on an incomplete perspective, one that fails to acknowledge the separable *and connectable* influences of being human, and so focuses too heavily on incomplete parts of a whole.

Repeatedly, the Western worldview has opted to reduce humanity to its individuality. It boasts the strengths and conquests of the self, heralding the self's

[8] Here, using key examples from Greek, Renaissance, and Enlightenment thinking, I outline a Western emphasis on separable selves that has been carried on through Western thought

capacities above all else, while ignoring or devaluing our interconnectedness. As the lowest common denominator, as an entity we can be certain of, the self takes center stage in the West. Community, relationships, and our dependence on others, then, are underexplored, overshadowed by the grandeur of the self's capacity. Under this worldview, we relish self-direction, esteeming our independence and the heroic pursuits therein. In the process, we unintegrate ourselves from our social environment, all of which is a far cry from the connectability of our nature. The Cultural Historian Richard Tarnas remarks on this separateness-driven worldview in his summary of individuality in Western thought. He writes,

> The "man" of the Western tradition has been a questing masculine hero, a Promethean biological and metaphysical rebel who has constantly striven to differentiate himself from and control the matrix out of which he emerged... For the evolution of the Western mind has been driven by a heroic impulse to forge an autonomous rational human self by separating it from the primordial unity with nature" (Tarnas 1991, pg. 441).

Embedded in Western understanding is a construction of reality centered in on this self-guided individual—on this independent, detachable perception that, by its own analytical power, maneuvers and orders the obstacles of an external world. Under this view, individuals are self-determinate pursuers, by themselves understanding and autonomously deciding to do right and wrong within a detached environment of other people. The Western, moral individual is presented as one who, in turning her focus outward, by discerning the outlying environment in which she lives, acts in the aim of promoting self-understanding and, in turn, a higher form of self-guidance. Autonomy, as a broad concept, is

proclaimed the sole conduit of moral actions, as well as the approach to uncovering truth. A disconnect between self and environment (or, more precisely, between self and other), no matter how unhinged from the nature that made possible our intelligence and progress, has somehow found its way to the center of Western thought.

We have turned our backs on the interdependence of social connection. An indissoluble connection with others, from which Gilligan's *Different Voice* stems, has gone ignored. As Gilligan writes, "These stereotypes reflect a conception of adulthood that is itself out of balance, favoring the separateness of the individual self over connection to others...leaning more toward an autonomous life of work than toward the interdependence of love and care" (Gilligan 1982, pg. 17).

Thus, Western thought wrongly detaches the individual from the social networks in which she functions in with others, and from this vantage point the realm of community is left out. Make no mistake, the Western mind has long been aware of its social nature. Time and time again, however, it has opted to ignore or devalue its significance. To illustrate, in *Politics* Aristotle writes,

> Man is by nature a social animal; an individual who is unsocial naturally and not accidentally is either beneath our notice or more than human. Society is something that precedes the individual. Anyone who either cannot lead the common life or is so self-sufficient as not to need to, and therefore does not partake of society, is either a beast or a god.

Adopting Aristotle's distinction, when given the option between a beast and a god, the Western mind relentlessly concludes that self-sufficiently is the characteristic of a god, all the while ignoring the possibility of a beast.

Plato's *Crito* (written 360 BCE), for instance, exhibits a deficient understanding of communal interconnection within Greek concepts of morality, and so at the beginning of Western thought. In Plato's dialogue, Crito asks Socrates that he be allowed to fund Socrates' escape from prison, therefore preventing Socrates' death. Socrates, telling of the agreed upon social obligations of his Athenian life, argues that justice is derived in him following the motions of the state. By carrying out his life, being raised and formed within, coming to an agreement on the functions of Athenian laws and conduct, and ultimately deciding to raise his children within Athens, Socrates sees justice in accepting his execution. He views his choice to live to maturity in Athens as an agreement to maintain its order. Socrates argues that his impending death is not justly preventable. He views Athenian society, the environment he matured within and so contracted as righteous, as higher than his individuality. And so, generally, Socrates argues that his death, if carried out fittingly in Athenian manner, is just. In agreement, Crito, after hearing this stance, sees no just path other than to accept Socrates' death at the hands of Athenian social order.

At first glance, the *Crito* appears to demonstrate a comprehensive understanding of community and social connectedness. Surely within the dialogue we acknowledge the individual's indebtedness to the society within which she operates, just as in Aristotle's *Politics.* In addition, an individual's perspective of justice is limited, and the ways of the society, in its own pursuit of justice, are argued as greater than the individuals that comprise it.

However, while the *Crito* depicts the integrated community, the justice maintained by the dialogue is shown to focus almost entirely on the autonomy and value of the self, and relies on an oversimplified understanding of social connectedness. Socrates repeatedly

looks down upon "the opinion of the many," claiming that "they cannot make a man wise or make him foolish; and whatever they do is the result of chance." The dialogue, then, is based in the belief that the capacity for dignity and direction, for conscious moral guidance, originates solely within the self. The movements of a society, when envisioned as a connected body, as "the many," are reduced and disregarded as non-directional fluctuations of chance. "And he ought to fear the censure and welcome the praise of that one only, and not of the many?" Socrates asks, to which Crito replies, "That is clear."

Thus, the *Crito* is an argument working from the belief that an assemblage of individuals, when recognized as a connected body, is rightly described as, "the many who have no understanding." The community, for Socrates, is rejected, and its collective behavior deemed nonsensical. Given his scoffing of the many, the grounds for justice emanate from the self. For Socrates, any morality stemming from the people of Athens, together merely "the many," does not include any deep and codependent connection, any inherent drive to connect at the heart of what makes us human. As an accumulation of separable selves, Athens' people are valued as a sum of parts, and devalued as a whole.

Because "the self" possesses sound moral guidance, while the products of an interconnected community are nothing but the collective, random movements of chance, justice results from self-guidance. Morally acceptable laws, or any form of state-induced control, are perceived, not as a means of bettering a unified community, but as systems of order best suited to propagate the autonomy of individuals. Under this light, morality is the aim of refining self-guidance within discrete units. Laws are still warranted, but only if their heightening of the capacity to guide one's self outweighs the limitations they establish.

To that end, Socrates understands, even in allowing his death, that to flee from, and therefore to deny Athens its code of law, would be to forfeit his morals and to devalue the autonomy that the city-state has imparted to him. His life or death, he realizes, should not undermine the systems of social order that have given him the possibility, along with his fellow Athenians, to rise above the soulless and unintelligible whole that is the public.

And so the sum of a society begins its long held place in the Western worldview. The community, comprehended as an integrated whole, is viewed as chaotic and unsophisticated. An understanding of the individual's dependence on social connection is absent. The community is hastily concluded as lacking direction relative to the self. The *Crito,* a product of Platonic beliefs, makes clear that an emphasis on self-guidance is at the center of Greek ideology, rooting itself as a fundamental value from the beginnings of Western thought onward.

A Greek emphasis on self-guidance and self-knowledge set the grounds for a Western worldview deep-seated in individuality. As Western thought evolved, it would come to fully embrace the individual's will and its capacity for self-governance. Platonic ideas, regaining their emphasis during the Renaissance, were adopted and utilized in Christian thinking. This Neoplatonic emphasis on self-guidance combined with the tenants of Christianity to form a characteristically Western belief in the transcendent capacity of the individual.

For instance, Pico della Mirandola's 1486 *Oration on the Dignity of Man*—the "Manifesto of the Renaissance"—focuses all of its energy on the dimensions and capabilities of the self. For Mirandola, God made man unconfined by nature, or by the limits and laws to which all other beings are subject to. Mirandola joyously triumphs in man's

capacity. He writes that God says to Adam, "We have given thee, Adam, to the end that according to thy longing and according to thy judgment thou mayest have and possess what abode, what form and what functions thou thyself shalt desire...We have set thee at the world's center that thou mayest from thence more easily observe whatever is in the world" (Wilkie, 2001, pg. 2266). Mirandola finds human uniqueness and beauty in the self's capacity. He asserts that our individual pursuits are at the core of what makes man special. He paints the self as a transformational genius, whereby whatever it wills it can become. "...So that with freedom of choice and with honor," he further writes that God says to Adam, "as though the maker and molder of thyself, thou mayest fashion thyself in whatever shape thou shalt prefer" (Wilkie, 2001, pg. 2266). Man is special, argues Mirandola, in that his quest is unshackled from nature's boundaries and in the hands of one's will.

The "Manifesto of the Renaissance" is then an assertive and powerful celebration of human autonomy and agency. A major figure of the Italian Renaissance, Mirandola reaffirms a worldview that has been echoing through Western thought since Plato. His *Oration on the Dignity of Man*, perhaps the most influential work of Renaissance philosophy, reaffirms to the Western mind a celebration of the self's capacity and its place as a highpoint of nature. Interdependence, for the West, continues to hold no place in man's dignity. The lens of our nature remains unnoticed.

Furthermore, influential theologians were able to further elevate the concept of self-guidance, claiming it as the unique vessel through which God and his creation can be understood. For instance, Martin Luther's emphasis on universal priesthood placed individual believers at the center of Christianity. Together with this conception, other Christian philosophers of the Renaissance, such as St. Thomas Aquinas, fostered a belief in

the Godliness of existence. Grounded in the Christianity of the Renaissance, to reveal truth became more and more of an endeavor to know oneself and to celebrate one's mode of existence. Self-centered, Neoplatonic conceptions of man, then, were raised higher as Western thinking moved forward.

This Neoplatonic emphasis on autonomy along with a Christian advancement of self-guidance during the Renaisance continued a separateness-driven Western worldview. Works from the Age of Enlightenment, once again, focus themselves on individual liberty and human autonomy; they engage in explorations occupied almost solely with selfness.

For instance, Adam Smith, a fundamental figure during the Enlightenment, and by many considered the founder of modern economics, cherishes and celebrates the capacities of the individual in his 1776 *The Wealth of Nations.* In this work, Smith argues that the public benefits from, not so much social cooperation or communication, but from the actualizing of individual self-interests. Smith famously writes,

> It is not from the benevolence of the butcher, the brewer, or the baker that we expect our dinner, but from their regard to their own interest. We address ourselves, not to their humanity but to their self-love, and never talk to them of our own necessities but of their advantages. (Smith, 1904, pg. 26)

A separation between self and other is apparent in *The Wealth of Nations.* Like Socrates in the *Crito*, Smith's work acknowledges the benefits of a society, but does not view it as valuably connected. For the Western Mind, self-interest is solidly what guides us. A deep social connection is absent, or at the least invisible. It is no surprise that Smith's *The Theory of Moral Sentiments* (his self-proclaimed best work), in which moral consciousness is at least in part regarded as stemming from interaction and social relation, is today

overshadowed by his *Wealth of Nations.* In the end, Smith's own leanings on the work he authored go unseen by a self-interested Western world.

The Enlightenment was a period of heightened individualism, a furthering of the self and of arguments against ideas and behaviors that impinged upon it. The United State's Declaration of Independence, in its triumphant emphasis on individual, inalienable rights to attest, it was undoubtedly a valuable period in Western thought, a promotion of individual liberty and human rights that remains vitally important today. Nonetheless, the Enlightenment furthered a worldview of separable selfness, of individuals who are the sole possessors and imparters of sound guidance. With the backing of well-known philosophers of Democracy such as John Locke, Thomas Hobbes, and Jean-Jacques Rousseau, for the Western mind it was overwhelmingly the self-governance of individuals, rather than their inherent sociality, at the foundation of a just society.

Appearing around the same time as the Enlightenment, the Scientific Revolution furthered this worldview, primarily in its emphasis on reductionism. By reducing complex systems to individual components, modern scientific inquiry was able to bring forth unprecedented discovery and scientific insight. Reductionism accelerated scientific discovery immensely. It provided a useful framework for human progress. But in the face of reductionism's benefits, this framework found its way into non-scientific Western thinking as well. A focus on the self, in compliance with reductionism's tenant of reducing a system to its constituent parts (i.e. reducing the society to the individuals that comprise it), once more, is emphasized. In parallel with an emphasis on the capacity of the individual, reductionism emphasizes the behavior and characteristics of individual parts, rather than

the holistic and systematic behavior that results when these parts interact and connect. A focus and separation of the self, then, neatly complies with reductionist thinking.

Thus, these stepping-stones along Western thought illustrate a worldview that operates within the framework of unintegrated, separable, and self-directed individualities. The *Crito* demonstrates a valuing of self-guidance portrayed as both the source and aim of moral actions, one that rises above a soulless and unrefined public. A Western construction of morals, centered in on selfness, becomes established as the setting from which Western thought would progress. Later on, as the Platonic ideas expressed in The *Crito* were adopted by Christian theologians, and as the philosophy of the Renaissance began to revere experience and celebrate the self's capacity, autonomy's grasps on Western thought only tightened. Into the Enlightenment, Western thought, viewing the value of community exclusively in it being a sum, relation, or ordering of separable, self-interested individuals, carried this worldview through the modern era. Such a structuring of reality, of how humans relate to themselves and to the world, one that has evolved since the beginning of Western thought, has time and time again failed to comprehend the non-detachable unity of self and other, of a social connection among individuals that is instilled in human nature.

Chapter 4: Human Connectedness in Clearer View

I. Conclusion

Our sense as a social species, as people interdependent on the communities and others we live with, has been increasingly disregarded within Western thought. With the connected community lost in favor of an association of separable individuals, this Western worldview forgets a human nature that largely, to use Gilligan words, is "speaking in relationships". The consequences of favoring one construction over the other, of emphasizing separateness over connectedness, are left unchecked.

Gilligan writes that, "conceptions of the human life cycle present an attempt to order and make coherent the unfolding experiences and perceptions, the changing wishes and realities of everyday life" (5). This Western worldview, grounded in separateness, has failed to fully comprehend the inherent sociality that (as we have seen) characterizes our species. Western thinking forgets areas of complex humanness, as the general concept of self-guidance comes to be regarded as the means and end of human thought. The social relationships that inseparably relate the other and self, ones that are understandable not as a sum and relation of isolated parts but as contextually relative, evolutionarily beneficial ways of maneuvering an ever-changing environment, go unexpressed. The effects incurred by some selves due to actions of other selves, rather than the relationships that connect self and other, act as the structural components of being human. But Gilligan's *Different Voice,* our genes, our intellect, and our health, illuminate what is left behind when individuals are perceived as mere detachable units.

I believe that to further acknowledge human connection would be to the benefit of Western culture and human progress. I think that in facing what the future holds we ought to conceive ourselves in a way more in tune with what we are, or what our nature predisposes us to. Evidence makes clear that we depend on and extraordinarily benefit from social connection. With a clearer understand of our connection, we would be primed to respond to the world around us with a more refined view of ourselves, of the lens through which we face reality. As the 21st century begins, the challenges that face our species ought to be in part met by an understanding of our connected nature.

A few examples as to how a newfound emphasis on human connection might benefit human progress are worth outlining. One example lies in using a better understanding of our social nature in promoting women's rights. As a species, we would unquestionably benefit from an equality of the sexes, from a humanity that treats and acknowledges men and women as equal. One of the biggest setbacks of the Western world, of humankind, has been a historic and widespread social, political, and economic subjugation of half of our population on the grounds of their sex. Women have generally been given less access to educational and employment opportunities throughout history. It is certainly a depressing thought to imagine the talents and progress lost due to humanity's (thus-far) failure to treat women (and feminine perspectives in general) equally. To progress, humanity needs to better itself by fully realizing the equality of women, in doing so granting more of us the same opportunities to excel, and so putting the best minds, regardless of sex, towards progress.

If we accept Gilligan's premise that an emphasis on connection is integral to the moral development of girls, then perhaps a better understanding of social connection, and

so a better understanding of the ways in which girls develop a sense of morality, would aid in the push for women's equal rights. Evidence, after all, seems to indicate Gilligan's assertion. Woolley et al. (2010), for instance, found that a determinant factor in the performance/intelligence of groups working on a variety of tasks was positively correlated, not to the intelligence of the group's individuals, but to the social sensitivity and proportion of women in the group. A more balanced worldview, attentive to both separation and connection, could set into motion a worldview more compassionate and respectful to the perspectives of both men and women. In acknowledging the importance of interaction, communication, and interdependence in human nature, masculinity and femininity could both be acknowledge as important (i.e. Gilligan's *Different Voice* would be heard). With this acknowledgement, new perspectives paying mind to both separation and connectedness could lead us to new opportunities for understanding and progress.

Another example lies in scientific inquiry. I strongly believe that science would benefit from a worldview more in tune with human connection. Increasingly, scientists are aiming to understand problems that take the teamwork of thousands of scientists, engineers, and scholars. Scientific endeavors like those carried out in the International Space Station, the Large Hydron Collider, or scientific undertakings like the Human Connectome and the Human Genome project, for example, require immense scientific cooperation, involving thousands of scientists from a variety of disciplines. To emphasize communication and social connection would allow for scientists from various fields to better pool their findings. A integrative, multidisciplinary perspective, perhaps, would allow for new and more comprehensive ways of structuring and answering scientific questions. In the future, perhaps even the sciences and the humanities could interact and

pool their insights in ways not seen today, where both branches of inquiry could mutually benefit, improving upon their ultimately shared pursuit of beauty and truth. With questions always waiting to be answered, enhanced cooperativity among scientists, an enhanced connection between fields and between individuals, would surely further discovery. To emphasize our dependence and need for connection would compel scientific cooperation.

Lastly, to emphasize human connection would prepare us to make fuller use of the Internet, one of the most transformative innovations of the last few decades. The Internet has altered and added new modes of human interaction. Billions use the Internet every day. It has become a major component of both personal and public life. Millions of government institutions, businesses, and academic institutions now use the Internet to communicate with customers and operate their establishments. Advancements in computer technology have allowed for billions to continuously be within arms reach of Internet access. In seconds, people can access boundless information, or communicate with other Internet users and share information. With the Internet, our access to information and communication has grown tremendously.

As the Internet continues to change the way humans interact, we should probe into our social nature in order to gain the most from this new technology. For instance, the Internet presents many new opportunities for education. Those born in the 21st century will grow in a world with the Internet firmly infused in their lives. And the learning and early experiences of children will surely involve using the Internet. Never before has a generation started their lives with such access. With a sound understanding of how children learn socially (perhaps using some of the findings discussed above) schools and educational institutions could exploit this early Internet access in their teaching protocols,

designing lesson plans and activities more in tune with social learning in an age connected to the Internet. As the World Wide Web changes the ways in which humans access information and communicate with others, a higher emphasis on human connection would certainly provide us with the ability to respond effectively.

Social connection serves our benefit. It has made possible our intellect. It has fashioned the lens of our nature. Social connection is our defining asset. It is what makes you and I both human. As we head into the 21st century, working from the patterns of history, the assets and limitations of our nature, and the ambitions of the future, we should not lose sight of the unique forms of social connection that reside in being human. We should note the ever-present importance of connecting, knowing, and sharing the world with others. We should celebrate our social nature, and should cherish a shared world with others through which, together, we partake and discover in.

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